The following is the main information submitted to the ASME Diveristy Action Grant Committee:

1. Briefly describe your project and its objective:\*

This proposal concerns an initial project to develop technologies and techniques for water delivery systems appropriate for rural regions of developing countries. The objective is for members to apply the requirements development, solution search, design evaluation and selection, build and test, and delivery of a complete water distribution system which feeds a garden, fish farm, and local residential area within the university’s developing community simulation grounds.

A secondary project goal is to provide the engineering student a hands-on opportunity to apply the engineering design process to real world community service. Key skills developed during the project include: design, teamwork, leadership, oral and written communication, critical thinking, professional ethics and social context. The focus will be engineering project management and appropriate technological devices for developing communities.

1. How will your project be accomplished? (methodology)\*

Through hands-on activities, the student team will develop requirements, search technology alternatives, select a design, build, test and deliver a fully operational system in the sub-Saharan African simulated village on university property.

1. Who will be your target audience/customer?\*

The target audience includes people living in remote villages of developing communities in both central Africa and Latin America. The specific customer will be a university faculty member having over twenty years experience living in Kenya and surrounding regions in Africa. A scouting trip in the summer of 2010 will focus on the northern region of Haiti looking for synergistic opportunities to deliver similar projects in conjunction with local private Haitian K-12 school systems. Plans are to grow follow on projects and activities to deliver such systems in a targeted country.

1. What are the benefits of the project and for whom?\*

Initially, the students are the major benefactors. They will develop teamwork, leadership, critical thinking, and oral and written communication skills. They will also practice the use of professional ethics in a social context. Members of targeted developing communities will receive clean water for irrigation, drinking and other usages.

In addition, students involved in the project will experience firsthand the following:

Excitement of the new project,

Enthusiasm & apprehension of working with unfamiliar people,

Realization of the total work that must be done,

Frustrations when team members disagree,

New friendships that will last,

Adventure in searching for a solution,

Challenge of meeting a deadline,

Anxiousness of the demonstration,

Pride in a job well done,

Satisfaction in serving the community.

1. Describe how the project will be measured/evaluated:\*

The following team deliverables will be assessed: Project Charter, Specifications Document, Conceptual Design, Detailed Design, Product Demonstration, Status Updates, Final Presentation, Final Written Report, and Final Reflection Report (individual).

1. Describe in detail (as much as possible) a budget plan for the proposed project, including how much funding is being requested from the Diversity and Outreach Action Grant program and whether matching funds are available.\*

Funds requested from the DAG program will cover expendable materials. Capitalized equipment, tooling, land and existing infrastructure are university funded. The university and private sources will fund any travel expenses.

Materials required for the project include:

Piping from initial water source to central location $200

Pumps, energy generation and energy storage $800

Water storage facility (details to be determined, tower or cistern) $500

Distribution (piping, valves, etc.) to village locations $700

Total request for DAG funding: $2200

1. Describe in detail an activity plan and projected timetable for the project.\*

Based on required project deliverables:

Deliverable Date

Scouting Trip to Haiti Summer 2010

Class begins August 23, 2010

Project Charter September 14, 2010

Specifications Document October 5, 2010

Conceptual Design October 26, 2010

Detailed Design December 7, 2010

Product Test April 5, 2010

Final Report and Presentation May 3, 2010

